Trends and Characteristics of Medicare Hospice Beneficiaries in the USA

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BACKGROUND

Hospice provides critical support to patients and caregivers at the end of life with 48% of deaths among Medicare hospice beneficiaries occurring at home.¹ This program was originally designed primarily for cancer patients with a relatively predictable end-of-life trajectory. However, the American population has changed, as have medical treatments and hospice admission criteria.

OBJECTIVE

We sought to assess changes in hospice care and hospice beneficiaries using publicly available data from 2014 to 2017.

METHODS AND FINDINGS

We analyzed de-identified data from the CMS Fee-For-Service Post-Acute Care Provider Public Use Files from 2014 through 2017.² The primary data source is the CMS Chronic Condition Data Warehouse with 100% of Medicare enrollment and fee-for-service claims data. To assess differences between 2014 and 2017, analysis of variance was used for continuous variables while logistic regression was used for categorical variables.

The number of Medicare beneficiaries using hospice increased from 1,367,114 in 2014 to 1,545,509 in 2017 (+ 13.0%), representing 45.7% and 48.2% of all Medicare decedents respectively.¹ Amongst Medicare hospice beneficiaries in 2017, average age was 82.4 years, 58.2% were female, and 82.3% were white (Table 1). The number of days in hospice increased from 91,909,774 in 2014 to 106,387,029 in 2017 (+ 15.8%), and the percentage of days during which routine home care was delivered also increased as did the rate of live discharge from hospice care. During that period, hospice length of service also grew longer, and Medicare Advantage and Medicaid enrollees increased. Total Medicare payments

increased from \$15.1 billion US dollars to \$17.9 billion US dollars (+ 18.5%). However, while both Medicare payments per diem (\$163.82 to \$168.41) and per beneficiary (\$11,013.62 to 11,593.62) increased, home health and skilled nursing visits in the last week of life decreased (all $p < 0.0001$).

A downward trend was observed in the proportion of hospice beneficiaries with a primary diagnosis of cancer, dementia, and respiratory illness, while the number of stroke patients increased. The proportion of patients with heart disease remained largely unchanged. There was a slight increase in the proportion of minority hospice enrollees.

DISCUSSION

As hospice use continues to grow, our data shows a decrease in the proportion of patients with cancer enrolled in hospice with an increase in patients with other conditions such as stroke. Second, even though there was an increase in costs, decreases were noted in nursing visits and the proportion of patients receiving higher intensity care.

The findings of growth in hospice use and cost amongst Medicare beneficiaries build on findings from a recent MedPAC report and could reflect the aging population.³ The reduction in nursing visits in the last week of life could be due to greater adoption of programs and incentives to move beneficiaries out of higher intensity post-acute care. However, this reduced frequency of nursing services was also coupled with increase in per-diem costs.

One aspect that merits additional investigation might be the role of for-profit hospices which in 2017 comprised 69% of all hospice providers.³ For-profit hospices provide fewer high-intensity service days and are more likely to enroll patients with conditions that require lower frequency of nursing visits.^{4,5}

Our data shows that the patient population enrolled in hospice continues to evolve. While the absolute number of patients with dementia enrolled in hospice increased, their proportion compared with other diagnoses in hospice decreased, likely due to faster enrollment of patients with other conditions. The largest increase was noted in patients with stroke. We speculate that they may seek hospice for better control or to avoid Medicaid, since many might not fit the 6-month prognosis requirement and should instead be considered disabled. Patients with cardiovascular disease continue to be under-represented in hospice.⁶ These patients face

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Table 1 Differences in Medicare Hospice Beneficiaries from 2014 to 2017

Characteristics	2014 (N = 1,367,114)	2017 (N = 1,545,509)	Odds ratio
Demographics			
Average age (years)	82.1	82.4	– 0.29
Female hospice beneficiaries	58.5%	58.2%	0.99
White hospice beneficiaries	83.3%	82.3%	0.93
Black hospice beneficiaries	7.7%	7.8%	1.02
Asian hospice beneficiaries	1.0%	1.3%	1.31
Hispanic hospice beneficiaries	5.5%	5.9%	1.09
Medicare advantage beneficiaries	29.4%	34.7%	1.27
Medicaid beneficiaries	25.0%	25.2%	1.01
Hospice use patterns			
Routine home care days	97.7%	98.1%	1.24
Total live discharges	10.3%	11.3%	1.11
Beneficiaries with ≤ 7 hospice days	25.7%	25.5%	0.99
Beneficiaries with > 60 hospice days	32.0%	32.5%	1.02
Beneficiaries with > 180 hospice days	11.9%	12.5%	1.06
Primary diagnosis			
Cancer	28.4%	26.1%	0.89
Dementia	19.7%	17.9%	0.89
Circulatory/heart disease	17.7%	17.3%	0.97
Respiratory disease	9.8%	8.7%	0.88
Stroke	7.0%	9.2%	1.34
Nursing visits in week prior to death			2017–2014 difference
Home health visits (h/day)	0.52	0.38	0.13
Skilled nursing visits (h/day)	1.41	1.17	0.24
Social service visits (h/day)*	0.11	0.11	– 0.00

Units are percentages unless specified otherwise in parentheses. All *p* values for differences < 0.001 except the data indicated with asterisk (*) which was non-significant

significant challenges when accessing hospice. Flexibility in the hospice program should be tested to allow tailored care for these patients.

Limitations are as follows: (1) We did not have access to profit/non-profit status of hospice providers. (2) These data are annual and cannot account for beneficiaries that remain in hospice across years. However, we did not include years between 2014 and 2017 in our comparison to minimize this likelihood.

Our findings highlight the need to carefully monitor hospice industry. It is critical that reimbursement be linked to outcomes and closer attention be paid to quality of hospice care.

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Compliance with Ethical Standards:

Conflict of Interest: The authors declare that they do not have a conflict of interest.

REFERENCES

1. National Hospice and Palliative Care Organization - Facts and Figures 2018 Edition. NHPCO website: https://www.nhpco.org/wp-content/uploads/2019/07/2018_NHPCO_Facts_Figures.pdf. Accessed 5 March 2020.
2. Center for Medicare and Medicaid Services. Legacy Medicare Provider Utilization and Payment Data: Hospice Providers. <https://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/Medicare-Provider-Charge-Data/Hospice>. Accessed 5 March 2020.
3. MedPAC Data Book, Section 11: Other Services. 2019. http://medpac.gov/docs/default-source/data-book/jun19_databook_sec11_sec.pdf?sfvrsn=0.

4. **Wachterman MW, Marcantonio ER, Davis RB, McCarthy EP.** Association of hospice agency profit status with patient diagnosis, location of care, and length of stay. *JAMA*. 2011;305(5):472–479.
5. **Stevenson DG, Grabowski DC, Keating NL, Huskamp HA.** Effect of Ownership on Hospice Service Use: 2005–2011. *J Am Geriatr Soc*. 2016;64(5):1024–1031.
6. **Cross SH, Warraich HJ.** Changes in the Place of Death in the United States. *N Engl J Med*. 2019;381(24):2369–2370.

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